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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/486,779	03/02/2000	ALEX Q. HUANG	01640052AA	2967

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/486,779

Applicant(s)

HUANG, ALEX Q.

Examiner

Steven Loke

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 19-32, 38, 45 and 46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 19-22, 45 and 46 is/are allowed.
- 6) ☒ Claim(s) 2-9 and 23-32 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claim 38 is objected to because of the following informalities: lines 10-11, the phrase "said thyristor device" has no antecedent basis. Appropriate correction is required.

2. The disclosure is objected to because of the following informalities: There is no description of the shaded rectangle in the left side of fig. 18. There is no description of the symbol "B" in fig. 19.

Appropriate correction is required.

3. Claims 2-9, 26, 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Figs. 17A to 17D show an ETO thyristor device package having a thyristor [400], a first plurality of discrete transistors Q1 and a second plurality of discrete transistors Q2. The specification never discloses a thyristor device package comprises the claimed structures as claimed in claims 2-4 and 6-9.

Figs. 17A to 17D disclose the first MOS transistor Q1 comprises a NMOS transistor. The specification never discloses the first MOS transistor comprises a PMOS transistor as claimed in claim 5.

The specification never discloses the MOS transistors of the second plurality of discrete switching devices having respective gates connected to the gate terminal of the first discrete switching device as claimed in claim 26.

Fig. 18 discloses a connection connecting the gate of the transistor Q2 to the thyristor gate. The specification never discloses a connection connecting the gate of each of said MOS transistors of the second plurality of discrete switching devices to the thyristor gate through a diode as claimed in claim 31.

Fig. 19 discloses a capacitor connected in parallel to the MOS transistor Q2. The specification never discloses a capacitor connected in parallel to said MOS transistor of the first plurality of discrete switching devices (Q1) connecting said second terminal of said MOS transistor to said thyristor gate as claimed in claim 32.

4. Claims 23-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23, lines 19-20, the phrase "a second terminal of said second plurality of discrete switching devices" is unclear whether it is being referred to "a second terminal of each of said second plurality of discrete switching devices".

5. Applicant's arguments filed 8/6/04 have been fully considered but they are not persuasive.

It is urged, in page 12 of the remarks, that the rectangle in fig. 18 is a generic depiction of a circuit for injecting current into the thyristor gate as disclosed at page 22, lines 14-16. However, page 22, lines 14-16 never discloses anything about the rectangle in fig. 18.

It is urged, in page of the remarks, that the "floating ohmic contact" of claim 2 and illustrated in fig. 1A as a strap on the device surface also appears as a discrete

connection in fig. 1B. However, claim 1, the parent claim of claim 2, is directed to an ETO (emitter turn-off thyristor) package having a thyristor [400], a first plurality of discrete transistors Q1 and a second plurality of discrete transistors Q2. Fig. 1A is directed to an integrated ECT (emitter controlled thyristor) and fig. 1B is directed to an equivalent circuit of an ECT of fig. 1A. The specification never discloses the "floating ohmic contact" of claim 2 and illustrated in fig. 1A as a strap on the device surface also appears as a discrete connection in fig. 1B. Fig. 1B is only an equivalent circuit of fig. 1A and the specification never discloses the circuit elements in fig. 1B can be in discrete form. In addition, the specification never discloses the ECT device of fig. 1A and 1B can be applied to the ETO package in figs. 17A-17D.

It is urged, in page 14 of the remarks, that the strap connection of claims 3 and 8 between discrete devices as well as the connection recited in claim 26 also appear to be well-supported by the disclosure at page 21, lines 8-9. However, as mentioned in the above paragraph, the strap is formed in the integrated ECT device of fig. 1A. The strap never appears in the ETO package of figs. 17A-17D. The specification never discloses the strap is appeared as a discrete connection in fig. 1B. The specification (pages 21, lines 18-19) only discloses the metal layer [403] is an ETO cathode. The specification never discloses the strap connection of claims 3 and 8 between discrete devices. The specification also never discloses the MOS transistors of the second plurality of discrete switching devices having respective gates connected to the gate terminal of the first discrete switching device as claimed in claim 26.

It is urged, in page 14 of the remarks, that claim 4 is well-supported by fig. 4B. However, fig. 4 is directed to an integrated ECT device. Fig. 4 never discloses the integrated ECT device can be formed in the ETO device package of figs. 17A-17D.

It is urged, in page 14 of the remarks, that claims 5-7 is well-supported by figs. 13A-13B and 14A-14B. However, figs. 13A-13B and 14A-14B only disclose two transistors connected to a thyristor. They never disclose a third transistor as claimed in claims 5-7.

It is urged, in page 14 of the remarks, that the diode is well-supported by figs. 10B, 11B and 12B. However, figs. 10B, 11B and 12B only disclose a diode connected to a transistor and a thyristor. Figures 10B, 11B and 12B never disclose the package comprises two transistors as claimed in claim 1.

It is urged, in page 15 of the remarks, that the capacitor connection of claim 32 is well supported by the illustration of figs. 18 and 19. However, the capacitor [C600] of figs. 18 and 19 is connected to the transistor Q2. The capacitor is not connected in parallel to the MOS transistor Q1 as claimed in claim 32.

6. Claims 1, 19-22, 45 and 46 are allowed.
7. Claim 38 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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October 24, 2004

Steven Loka
Primary Examiner
